



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,669	09/12/2003	Duane Treybig	7726-ONES	9132
49459	7590	08/02/2006	EXAMINER	
NALCO COMPANY			TOSCANO, ALICIA	
1601 W. DIEHL ROAD			ART UNIT	
NAPERVILLE, IL 60563-1198			PAPER NUMBER	

1712

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,669

Applicant(s)

TREYBIG ET AL.

Examiner

Alicia M. Toscano

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/12/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/12/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1,2, 4-8, 12-17, 19, 20, 29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Treybig (US Pat 6569983)

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Treybig discloses a composition for recovering hydrocarbon fluids from a subterranean reservoir. Said composition comprises a branched polyhydroxyetheramine prepared by reacting an amine having two reactive hydrogen atoms with a diepoxide followed by an N-alkylating agent (abstract, Claim 1), said amine can have alkylene oxide functionality (figure g depicts an amine with 2 active hydrogens

Art Unit: 1712

and alkylene oxide units in its backbone). This amine alone meets the requirements of the polyhydroxyetheramine composition of Claim 1 and the reaction meets the requirements of Claim 29. Without knowing the molecular weight of the polyhydroxyetheramine it is impossible for the Examiner to calculate the weight percent of applicants vs. the volume % disclosed by '983, however since the solvent is water and only 2000 ppm of active material, or polyhydroxyetheramine, is disclosed to be used for treatment (Column 14 Line 13) Examiner finds the volume percent of 0.005 to 2 to overlap with a weight percent of 0.005 to 2., thus meeting all the limitations for Claim 1.

The use of diglycidyl esters of diacids for the diepoxide is disclosed in Column 3 Line 3, meeting the requirements for Claim 2, the alkylene oxide functionalized amines are disclosed in figures b, c, f and g (Column 4 and 5), meeting the requirements for Claim 4, the amines having 2 reactive hydrogen atoms are found in figures a, d and e, as required for Claim 5. R, R₂ and Z are disclosed in Column 5 Lines 49-52, meeting the requirements for Claim 6. The amine having 2 reactive hydrogen atoms is further disclosed in Column 5 Lines 53 to Column 6 Line 5, meeting the requirements for Claim 7, the diglycidyl esters of diacids are disclosed in Column 6 Lines 9-19, meeting the requirements for Claim 8, the use of diglycidyl ether of neopentyl glycol and glycerol are disclosed in Column 3 Line 33-35, meeting the requirements for Claims 12 and 13. The use of 1,2,3,4 diexproxybutane is disclosed in Column 3 Line 53, as required for Claim 14, the use of diglycidyl ether of dimer acid is disclosed in Column 3 Line 3 as required

Art Unit: 1712

for Claim 15, the use of secondary, tertiary and ditertiary amines are disclosed in Column 6 Line 25-29, as required for Claim 16.

Reacting a polyhydroxyetheramine (which has substituents of alkylene oxide and 2 reactive hydrogen groups as shown in figures a-g) with a diepoxide and then reacting that product with an amine having 1 or 2 reactive hydrogen atoms is disclosed in Claim 9 of '983, meeting the requirements for Claims 17 and 31. The use of a mixture of diepoxides and aliphatic or aromatic triepoxides is disclosed in Column 6 Lines 20-24, as required by Claim 19 and the use of an alkylating agent after the reaction of the amine and the mixture of the epoxides is disclosed in Claim 10 of '983, as required for Claim 20.

2. Claims 1, 3, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by McCoy (US Pat 4396499).

McCoy discloses a demulsifier for subterranean formations (abstract and Column 1 Lines 22-25). Said demulsifier is prepared by the reaction between polyoxyalkylene diamines and diepoxides. The polyoxyalkylene diamine can be a JEFFAMINE as in Example 1, which has both alkylene oxide moieties and an amine with 2 reactive hydrogens. Use of a 1 wt% of the demulsifier is used as disclosed in Example X1, thus meeting the requirements for Claim 1. The diepoxide is disclosed in Column 2 Line 44 to be diglycidyl ether of Bisphenol A, meeting the requirements for Claims 3, 10 and 11.

3. Claims 26, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Arora (US Pat 5760108).

Arora discloses a curable epoxy resin ester 35-45% resin ester and 25-35% each of water and organic cosolvent (Column 14 Lines 45-49). The resin ester is an amine-epoxy adduct with a polyhydric phenol and an epoxy resin (Column 13 Lines 7-8) and the use of polyoxyalkyleneamines is disclosed in Column 6 Lines 14-Column 9 Line 47. A polyoxyalkyleneamine having alkylene oxide adducts and 2 reactive hydrogen atoms is disclosed in Column 8 Line 56. The cosolvent stabilizes the dispersion of the resin (Column 13 Line 43) and can include the use of dipropylene glycol butyl ether (Column 13 Line 62), as required for Claims 26-28.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Treybig in view of Gupta (US Pat Pub 2003/0008781).

Treybig includes elements of the invention as discussed above. Treybig does not disclose the use of clay stabilization salts. Gupta discloses the use of clay stabilization salts in subterranean formulations. Because clay can swell or be dislodged during a fracturing operation, thereby reducing its permeability, said salts are taught by Gupta to be added to a fluid in order to prevent or reduce particulate material from being dislodged during the fracturing operation. Gupta discloses using 2 or 3 weight percent of a stabilization salt, whereby said salt can be ammonium chloride [0006], as required for Claims 21 and 22. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Treybig the use of stabilization salts, as taught by Gupta, in order to increase or maintain the permeability of the clay in the subterranean formation.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Treybig in view of Au (US 4830827).

Treybig includes elements of the invention as discussed above. Treybig does not include the use of methyl chloride or dimethyl sulfate as an alkylating agent. Au discloses a method of synthesizing novel triazine compounds. Said compounds are alkylated in order to produce the desired triazine derivative (Column 5 Lines 27-29). Alkylating agents that react with the active hydrogen of N moieties are disclosed to be methyl chloride. It would have been obvious to one of ordinary skill in the art at the time

of the invention to include in Treybig the use of methyl chloride, as taught by Au, as an alkylating agent in order to prepare a desired end group derivative.

6. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Treybig in view of Bruhnke (US Pat 5779405).

Treybig includes elements of the invention as discussed above. Treybig does not disclose the use of an aqueous composition of polyhydroxyetheramine with 0.005 to 2 weight percent of solubilizing agent. Bruhnke discloses a cleaner composition with a reactive dye colorant. Said cleaner contains 0-35% solvent and 1 to 5000 ppm of a polyoxyalkylene-substituted colorant (Column 4 Lines 10-14). Said colorant contains JEFFAMINE groups, which are polyhydroxyetheramines containing alkylene oxide units and 2 active hydrogens (Column 10 Lines 17-42). Bruhnke discloses the addition of solvent as a solubilizing agent to the cleaner. Said solubilizing agents include ethylene glycol monobutyl ether (Column 3 Lines 34-35), as required by Claims 23 and 24. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Treybig the use of solubilizing agents, as taught by Bruhnke, in order to increase the solubility of the polyhydroxyetheramine and to keep the solution homogeneous.

See MPEP 2144.05, "A prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness" In re Peterson, 315 F.3d 1325, 65 USPQ2d 1379 1382-93

7. Claims 18 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Treybig.

Treybig includes elements of the invention as discussed above. Treybig does not explicitly disclose the reaction of a alkylene oxide amine which has 2 reactive hydrogens and a second amine having 3 or more reactive hydrogen atoms to form a first product and then reacting this product with a third polyhydroxyetheramine to form the final product, as required in Claim 18, nor the use of this method with an alkylating agent, as required for Claim 32. Treybig discloses branched polyhydroxyetheramines to have superior oil-water performance in Example 11. It would have been obvious to one of ordinary skill in the art at the time of the invention to further increase branching, by adding sequential reactions of polyhydroxyetheramines, as taught by Treybig in Claim 9 and Example 11, in order to further improve the oil-water performance of the polyhydroxyetheramine.

Examiner notes Applicants Examples beginning on Page 17 of Specification to disclose making a solution of a polyhydroxyetheramine purchased from Dow Chemical Comp as the polyhydroxyetheramine of his invention. Applicant does not further modify or improve this Dow product, nor does applicant disclose what the product, or the structure of the product is.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

Art Unit: 1712

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 29 and 31 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 8 and 9 of U.S. Patent No. 6569983. Although the conflicting claims are not identical, they are not patentably distinct from each other because Instant Claim 29 requires the reaction of an diepoxide with an alkylene oxide functionalized amine and one or more amines having 2 reactive hydrogen atoms, as met by the limitations of claims 1, 2 and 9 of '983. Instant Claim 31 required a reaction between a diepoxide, an alkylene oxide functionalized amine and one or more amines having 2 reactive hydrogen atoms (said alkylene oxide and 2 reactive hydrogen requirements are met by monomer g of Claim 2 of '983), further reacted with another amine having 1 or 2 reactive hydrogens, met by claim 9 of '983 and an alkylating agent, met by claim 8 of '983.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is 571-272-2451. The examiner can normally be reached on Monday to Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMT

A handwritten signature in black ink, appearing to read 'R. E. Sellers', written in a cursive style.

ROBERT E.L. SELLERS
PRIMARY EXAMINER